

3120



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1600

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/954,737

DATE: 02/28/2002

TIME: 09:13:21

Input Set : A:\GC634-2-SEQLIST.TXT

Output Set: N:\CRF3\02282002\I954737.raw

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MAR 14 2002

TECH CENTER 1600/2900

4 <110> APPLICANT: Bron, Sierd  
5 Jongbloed, Jan D.H.  
6 Mueller, Joerg P.  
7 Van Dijl, Jan M.  
9 <120> TITLE OF INVENTION: Twin-Arginine Translocation in Bacillus  
12 <130> FILE REFERENCE: GC634-2  
14 <140> CURRENT APPLICATION NUMBER: US 09/954,737  
C--> 15 <141> CURRENT FILING DATE: 2001-09-20  
17 <150> PRIOR APPLICATION NUMBER: US 60/233,610  
18 <151> PRIOR FILING DATE: 2000-09-18  
20 <160> NUMBER OF SEQ ID NOS: 29  
22 <170> SOFTWARE: FastSEQ for Windows Version 4.0  
24 <210> SEQ ID NO: 1  
25 <211> LENGTH: 89  
26 <212> TYPE: PRT  
27 <213> ORGANISM: Escherichia coli  
29 <400> SEQUENCE: 1  
30 Met Gly Gly Ile Ser Ile Trp Gln Leu Leu Ile Ile Ala Val Ile Val  
31 1 5 10 15  
32 Val Leu Leu Phe Gly Thr Lys Lys Leu Gly Ser Ile Gly Ser Asp Leu  
33 20 25 30  
34 Gly Ala Ser Ile Lys Gly Phe Lys Lys Ala Met Ser Asp Asp Glu Pro  
35 35 40 45  
36 Lys Gln Asp Lys Thr Ser Gln Asp Ala Asp Phe Thr Ala Lys Thr Ile  
37 50 55 60  
38 Ala Asp Lys Gln Ala Asp Thr Asn Gln Glu Gln Ala Lys Thr Glu Asp  
39 65 70 75 80  
40 Ala Lys Arg His Asp Lys Glu Gln Val  
41 85  
43 <210> SEQ ID NO: 2  
44 <211> LENGTH: 67  
45 <212> TYPE: PRT  
46 <213> ORGANISM: Escherichia coli  
48 <400> SEQUENCE: 2  
49 Met Gly Glu Ile Ser Ile Thr Lys Leu Leu Val Val Ala Ala Leu Val  
50 1 5 10 15  
51 Val Leu Leu Phe Gly Thr Lys Lys Leu Arg Thr Leu Gly Gly Asp Leu  
52 20 25 30  
53 Gly Ala Ala Ile Lys Gly Phe Lys Lys Ala Met Asn Asp Asp Ala  
54 35 40 45  
55 Ala Ala Lys Lys Gly Ala Asp Val Asp Leu Gln Ala Glu Lys Leu Ser  
56 50 55 60  
57 His Lys Glu

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58 65
60 <210> SEQ ID NO: 3
61 <211> LENGTH: 57
62 <212> TYPE: PRT
63 <213> ORGANISM: Bacillus subtilis
65 <400> SEQUENCE: 3
66 Met Pro Ile Gly Pro Gly Ser Leu Ala Val Ile Ala Ile Val Ala Leu
67 1 5 10 15
68 Ile Ile Phe Gly Pro Lys Lys Leu Pro Glu Leu Gly Lys Ala Ala Gly
69 20 25 30
70 Asp Thr Leu Arg Glu Phe Lys Asn Ala Thr Lys Gly Leu Thr Ser Asp
71 35 40 45
72 Glu Glu Glu Lys Lys Lys Glu Asp Gln
73 50 55
75 <210> SEQ ID NO: 4
76 <211> LENGTH: 70
77 <212> TYPE: PRT
78 <213> ORGANISM: Bacillus subtilis
80 <400> SEQUENCE: 4
81 Met Phe Ser Asn Ile Gly Ile Pro Gly Leu Ile Leu Ile Phe Val Ile
82 1 5 10 15
83 Ala Ile Ile Ile Phe Gly Pro Ser Lys Leu Pro Glu Ile Gly Arg Ala
84 20 25 30
85 Ala Lys Arg Thr Leu Leu Glu Phe Lys Ser Ala Thr Lys Ser Leu Val
86 35 40 45
87 Ser Gly Asp Glu Lys Glu Glu Lys Ser Ala Glu Leu Thr Ala Val Lys
88 50 55 60
89 Gln Asp Lys Asn Ala Gly
90 65 70
92 <210> SEQ ID NO: 5
93 <211> LENGTH: 62
94 <212> TYPE: PRT
95 <213> ORGANISM: Bacillus subtilis
97 <400> SEQUENCE: 5
98 Met Glu Leu Ser Phe Thr Lys Ile Leu Val Ile Leu Phe Val Gly Phe
99 1 5 10 15
100 Leu Val Phe Gly Pro Asp Lys Leu Pro Ala Leu Gly Arg Ala Ala Gly
101 20 25 30
102 Lys Ala Leu Ser Glu Phe Lys Gln Ala Thr Ser Gly Leu Thr Gln Asp
103 35 40 45
104 Ile Arg Lys Asn Asp Ser Glu Asn Lys Glu Asp Lys Gln Met
105 50 55 60
107 <210> SEQ ID NO: 6
108 <211> LENGTH: 171
109 <212> TYPE: PRT
110 <213> ORGANISM: Escherichia coli
112 <400> SEQUENCE: 6
113 Met Phe Asp Ile Gly Phe Ser Glu Leu Leu Leu Val Phe Ile Ile Gly
114 1 5 10 15

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115 Leu Val Val Leu Gly Pro Gln Arg Leu Pro Val Ala Val Lys Thr Val
116      20      25      30
117 Ala Gly Trp Ile Arg Ala Leu Arg Ser Leu Ala Thr Thr Val Gln Asn
118      35      40      45
119 Glu Leu Thr Gln Glu Leu Lys Leu Gln Glu Phe Gln Asp Ser Leu Lys
120      50      55      60
121 Lys Val Glu Lys Ala Ser Leu Thr Asn Leu Thr Pro Glu Leu Lys Ala
122 65      70      75      80
123 Ser Met Asp Glu Leu Arg Gln Ala Ala Glu Ser Met Lys Arg Ser Tyr
124      85      90      95
125 Val Ala Asn Asp Pro Glu Lys Ala Ser Asp Glu Ala His Thr Ile His
126      100     105     110
127 Asn Pro Val Val Lys Asp Asn Glu Ala Ala His Glu Gly Val Thr Pro
128      115     120     125
129 Ala Ala Ala Gln Thr Gln Ala Ser Ser Pro Glu Gln Lys Pro Glu Thr
130      130     135     140
131 Thr Pro Glu Pro Val Val Lys Pro Ala Ala Asp Ala Glu Pro Lys Thr
132 145     150     155     160
133 Ala Ala Pro Ser Pro Ser Ser Ser Asp Lys Pro
134      165     170
136 <210> SEQ ID NO: 7
137 <211> LENGTH: 258
138 <212> TYPE: PRT
139 <213> ORGANISM: Escherichia coli
141 <400> SEQUENCE: 7
142 Met Ser Val Glu Asp Thr Gln Pro Leu Ile Thr His Leu Ile Glu Leu
143 1      5      10      15
144 Arg Lys Arg Leu Leu Asn Cys Ile Ile Ala Val Ile Val Ile Phe Leu
145      20      25      30
146 Cys Leu Val Tyr Phe Ala Asn Asp Ile Tyr His Leu Val Ser Ala Pro
147      35      40      45
148 Leu Ile Lys Gln Leu Pro Gln Gly Ser Thr Met Ile Ala Thr Asp Val
149      50      55      60
150 Ala Ser Pro Phe Phe Thr Pro Ile Lys Leu Thr Phe Met Val Ser Leu
151 65      70      75      80
152 Ile Leu Ser Ala Pro Val Ile Leu Tyr Gln Val Trp Ala Phe Ile Ala
153      85      90      95
154 Pro Ala Leu Tyr Lys His Glu Arg Arg Leu Val Val Pro Leu Leu Val
155      100     105     110
156 Ser Ser Ser Leu Leu Phe Tyr Ile Gly Met Ala Phe Ala Tyr Phe Val
157      115     120     125
158 Val Phe Pro Leu Ala Phe Gly Phe Leu Ala Asn Thr Ala Pro Glu Gly
159      130     135     140
160 Val Gln Val Ser Thr Asp Ile Ala Ser Tyr Leu Ser Phe Val Met Ala
161 145     150     155     160
162 Leu Phe Met Ala Phe Gly Val Ser Phe Glu Val Pro Val Ala Ile Val
163      165     170     175
164 Leu Leu Cys Trp Met Gly Ile Thr Ser Pro Glu Asp Leu Arg Lys Lys
165      180     185     190

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166 Arg Pro Tyr Val Leu Val Gly Ala Phe Val Val Gly Met Leu Leu Thr
167      195      200      205
168 Pro Pro Asp Val Phe Ser Gln Thr Leu Leu Ala Ile Pro Met Tyr Cys
169      210      215      220
170 Leu Phe Glu Ile Gly Val Phe Phe Ser Arg Phe Tyr Val Gly Lys Gly
171 225      230      235      240
172 Arg Asn Arg Glu Glu Glu Asn Asp Ala Glu Ala Glu Ser Glu Lys Thr
173      245      250      255
174 Glu Glu
177 <210> SEQ ID NO: 8
178 <211> LENGTH: 254
179 <212> TYPE: PRT
180 <213> ORGANISM: Bacillus subtilis
182 <400> SEQUENCE: 8
183 Met Thr Arg Met Lys Val Asn Gln Met Ser Leu Leu Glu His Ile Ala
184 1      5      10      15
185 Glu Leu Arg Lys Arg Leu Leu Ile Val Ala Leu Ala Phe Val Val Phe
186      20      25      30
187 Phe Ile Ala Gly Phe Phe Leu Ala Lys Pro Ile Ile Val Tyr Leu Gln
188      35      40      45
189 Glu Thr Asp Glu Ala Lys Gln Leu Thr Leu Asn Ala Phe Asn Leu Thr
190      50      55      60
191 Asp Pro Leu Tyr Val Phe Met Gln Phe Ala Phe Ile Ile Gly Ile Val
192 65      70      75      80
193 Leu Thr Ser Pro Val Ile Leu Tyr Gln Leu Trp Ala Phe Val Ser Pro
194      85      90      95
195 Gly Leu Tyr Glu Lys Glu Arg Lys Val Thr Leu Ser Tyr Ile Pro Val
196      100      105      110
197 Ser Ile Leu Leu Phe Leu Ala Gly Leu Ser Phe Ser Tyr Tyr Ile Leu
198      115      120      125
199 Phe Pro Phe Val Val Asp Phe Met Lys Arg Ile Ser Gln Asp Leu Asn
200      130      135      140
201 Val Asn Gln Val Ile Gly Ile Asn Glu Tyr Phe His Phe Leu Leu Gln
202 145      150      155      160
203 Leu Thr Ile Pro Phe Gly Leu Leu Phe Gln Met Pro Val Ile Leu Met
204      165      170      175
205 Phe Leu Thr Arg Leu Gly Ile Val Thr Pro Met Phe Leu Ala Lys Ile
206      180      185      190
207 Arg Lys Tyr Ala Tyr Phe Thr Leu Leu Val Ile Ala Ala Leu Ile Thr
208      195      200      205
209 Pro Pro Glu Leu Leu Ser His Met Met Val Thr Val Pro Leu Leu Ile
210      210      215      220
211 Leu Tyr Glu Ile Ser Ile Leu Ile Ser Lys Ala Ala Tyr Arg Lys Ala
212 225      230      235      240
213 Gln Lys Ser Ser Ala Ala Asp Arg Asp Val Ser Ser Gly Gln
214      245      250
216 <210> SEQ ID NO: 9
217 <211> LENGTH: 245
218 <212> TYPE: PRT

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Output Set: N:\CRF3\02282002\I954737.raw

219 &lt;213&gt; ORGANISM: Bacillus subtilis

221 &lt;400&gt; SEQUENCE: 9

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222 Met Asp Lys Lys Glu Thr His Leu Ile Gly His Leu Glu Glu Leu Arg
223 1 5 10 15
224 Arg Arg Ile Ile Val Thr Leu Ala Ala Phe Phe Leu Phe Leu Ile Thr
225 20 25 30
226 Ala Phe Leu Phe Val Gln Asp Ile Tyr Asp Trp Leu Ile Arg Asp Leu
227 35 40 45
228 Asp Gly Lys Leu Ala Val Leu Gly Pro Ser Glu Ile Leu Trp Val Tyr
229 50 55 60
230 Met Met Leu Ser Gly Ile Cys Ala Ile Ala Ala Ser Ile Pro Val Ala
231 65 70 75 80
232 Ala Tyr Gln Leu Trp Arg Phe Val Ala Pro Ala Leu Thr Lys Thr Glu
233 85 90 95
234 Arg Lys Val Thr Ile Met Tyr Ile Met Tyr Ile Pro Gly Leu Phe Ala
235 100 105 110
236 Leu Phe Leu Ala Gly Ile Ser Phe Gly Tyr Phe Val Leu Phe Pro Ile
237 115 120 125
238 Val Leu Ser Phe Leu Thr His Leu Ser Ser Gly His Phe Glu Thr Met
239 130 135 140
240 Phe Thr Ala Asp Arg Tyr Phe Arg Phe Met Val Asn Leu Ser Leu Pro
241 145 150 155 160
242 Phe Gly Phe Leu Phe Glu Met Pro Leu Val Val Met Phe Leu Thr Arg
243 165 170 175
244 Leu Gly Ile Leu Asn Pro Tyr Arg Leu Ala Lys Ala Arg Lys Leu Ser
245 180 185 190
246 Tyr Phe Leu Leu Ile Val Val Ser Ile Leu Ile Thr Pro Pro Asp Phe
247 195 200 205
248 Ile Ser Asp Phe Leu Val Met Ile Pro Leu Leu Val Leu Phe Glu Val
249 210 215 220
250 Ser Val Thr Leu Ser Ala Phe Val Tyr Lys Lys Arg Met Arg Glu Glu
251 225 230 235 240

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252 Thr Ala Ala Ala Ala

253 245

255 &lt;210&gt; SEQ ID NO: 10

256 &lt;211&gt; LENGTH: 63

257 &lt;212&gt; TYPE: PRT

258 &lt;213&gt; ORGANISM: Bacillus alcalophilus

260 &lt;400&gt; SEQUENCE: 10

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261 Met Gly Gly Leu Ser Val Gly Ser Val Val Leu Ile Ala Leu Val Ala
262 1 5 10 15
263 Leu Leu Ile Phe Gly Pro Lys Lys Leu Pro Glu Leu Gly Lys Ala Ala
264 20 25 30
265 Gly Ser Thr Leu Arg Glu Phe Lys Asn Ala Thr Lys Gly Leu Ala Asp
266 35 40 45
267 Asp Asp Asp Asp Thr Lys Ser Thr Asn Val Gln Lys Glu Lys Ala
268 50 55 60

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270 &lt;210&gt; SEQ ID NO: 11

271 &lt;211&gt; LENGTH: 272

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/954,737

DATE: 02/28/2002

TIME: 09:13:22

Input Set : A:\GC634-2-SEQLIST.TXT

Output Set: N:\CRF3\02282002\I954737.raw

L:15 M:271 C: Current Filing Date differs, Replaced Current Filing Date